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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/857,415      | 08/29/2001  | Knut Ingvar Asen     | 2001-0698A          | 3354             |

513 7590 06/13/2003

WENDEROTH, LIND & PONACK, L.L.P.  
2033 K STREET N. W.  
SUITE 800  
WASHINGTON, DC 20006-1021

EXAMINER

LISH, PETER J

| ART UNIT | PAPER NUMBER |
|----------|--------------|
|----------|--------------|

1754

DATE MAILED: 06/13/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

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## Office Action Summary

Application No.

09/857,415

Applicant(s)

ASEN ET AL.

Examiner

Peter J Lish

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 31 March 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 9.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

**DETAILED ACTION**

Applicant's arguments filed 03/31/03 have been fully considered but they are not persuasive.

In response to applicant's arguments, the recitation "for recovering substantially all carbon dioxide generated in a combustion process" has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951). While the objective of the instantly claimed invention may differ from that of Prasad, no difference is seen between the claimed process steps.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., in the present invention it is acceptable to keep the oxygen concentration below 10%, the present invention will reduce the amount of sweep gas) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Regarding the applicant's arguments regarding the use of the Prasad et al. '223 patent, it is noted that the arguments do not address the teaching of the '223 patent which was combined with the primary reference, the '272 patent, to form the rejection. Applicant's arguments address the combustion and membrane units of the '232 patent, however, these units are not utilized in

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the rejection of the previous office action. It is made clear that the '232 reference is used only insofar as it teaches the use of a turbine on a combustion exhaust stream to generate power.

Regarding the applicant's arguments regarding the rejection of claim 1 under 35 U.S.C. 112, second paragraph, the applicant fails to address the issue raised by the examiner in the previous office action as to how the concentration of oxygen relates to its inherent oxidizing ability and what levels are thus excluded.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

#### ***Claim Rejections - 35 USC § 112***

Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The rejection of the previous office action, incorporated herein by reference, is maintained in its entirety.

#### ***Claim Rejections - 35 USC § 102***

Claims 1 and 3-5 are rejected under 35 U.S.C. 102(e) as being anticipated by Prasad et al. (USPN 5,888,272).

Prasad discloses a process whereby "an ion transport membrane that employs a solid oxygen conducting or mixed conducting membrane to separate oxygen from an oxygen-containing gas, typically air, and to utilize the oxygen separated in a downstream process

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including oxygen-enriched combustion. To reduce the partial pressure of oxygen on the permeate side in the ion transport membrane, an oxygen-depleted gas, for example waste gases from the combustion process, is used as a purge gas (*or sweep gas*) stream” (column 5, lines 22-28). Prasad’s method is a continuous one (Figure 1), therefore downstream stages take place in the same combustion chambers, ion transport modules, etc. It is thus that the steps of using combustion products as a sweep gas in the ion transport process and using the resulting oxygen-containing sweep gas in the subsequent combustion process be repeated in one or more stages.

Regarding claim 4, Prasad teaches that in most mixed conductors, the electronic conductivity greatly exceeds the oxygen ion conductivity (column 6, lines 25-26). Thus, it is inherent that these conductors contain both ionic and electronic conductivity.

Regarding claim 5, Prasad discloses a feed gas stream of air which is compressed and heated in a heat exchanger. He further teaches that the heating of this feed gas stream by heat exchange may be accomplished using high-temperature exhaust from the combustion process (column 9, lines 1-3).

Claim 12 is rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Prasad et al. (USPN 5,888,272).

Prasad et al., applied above, does not explicitly teach that the combustor is a non-catalytic combustor. However, because no mention is made to a catalyst, it is expected that the combustor of Prasad et al. is non-catalytic.

***Claim Rejections - 35 USC § 103***

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Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Prasad et al. (USPN 5,888,272).

The rejection of the previous office action, embodied herein by reference, is maintained in its entirety.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Prasad as applied to claim 1 above, and further in view of Prasad et al (USPN 5,976,223).

The rejection of the previous office action, incorporated herein by reference, is maintained in its entirety.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Prasad et al. (USPN 5,888,272).

Prasad et al., applied above, does not explicitly teach that the combustor is a catalytic combustor. However, it would have been obvious to one of ordinary skill at the time of invention to use a catalytic combustor in the process of Prasad et al. because catalytic combustors represent a well-known means of performing combustion which require less heat energy.

Claims 7-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Prasad et al. (USPN 5,888,272).

The process of Prasad et al., applied above, produces two exhaust gas streams, a combustion exhaust and a heated (oxygen-depleted) air exhaust. Prasad et al. does not explicitly teach the various utilities of the exhaust gases of the process, however, it would have been

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obvious to one of ordinary skill at the time of invention to apply the exhaust gases to a known process, such as that for generating heat and power, enhanced oil recovery, or the production of carbon containing products in the case of the combustion exhaust, and that for generating pure oxygen (such as by a recycle stream), synthesis gas, or heat in the case of the heated air exhaust, in order to enhance the economic efficiency of the process by making use of its waste streams in a known manner.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter J Lish whose telephone number is 703-308-1772. The examiner can normally be reached on 9:00-6:00 Monday through Friday.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on 703-308-3837. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-305-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

PL  
May 29, 2003



STUART L. HENDRICKSON  
PRIMARY EXAMINER